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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/047,245      | 01/14/2002  | David G. Harris      | HARRIS 1-1          | 5331             |

27973 7590 01/26/2005

OFFICE OF THE ASSOC. GEN. COUNSEL (IP & T)  
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EXAMINER

HUTTON JR, WILLIAM D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2179

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Notice of Allowability**

Application N .

10/047,245

Examiner

Doug Hutton

Applicant(s)

HARRIS ET AL.

Art Unit

2179

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's correspondence files 18 March 2002.
2. ☒ The allowed claim(s) is/are Claims 1-13.
3. ☒ The drawings filed on 18 March 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 01142002
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert D. Morelli on 5 January 2005.

Amend the application as follows.

*In the Claims:*

- Claim 1, Line 1 → amend the phrase "method" to — computerized method —;
- Claim 1, Line 10 → amend the term "sets" to — set —;
- Claim 1, Line 12 → amend the phrase "between the first set" to — between a first textual unit of the first set —;
- Claim 1, Line 12 → amend the phrase "and the second set" to — and a last textual unit of the second set —;
- Claim 2, Line 1 → amend the phrase "method" to — computerized method —;
- Claim 3, Line 1 → amend the phrase "method" to — computerized method —;
- Claim 4, Line 1 → amend the phrase "method" to — computerized method —;
- Claim 5, Line 1 → amend the phrase "method" to — computerized method —;
- Claim 5, Line 6 → amend "the last step" to — step (a) —;
- Claim 5, Line 10 → amend "the last step" to — step (c) —;

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- Claim 6, Line 1 → amend the phrase “method” to — computerized method —;
- Claim 7, Line 1 → amend the phrase “method” to — computerized method —;
- Claim 7, Line 3 → amend “of at least one textual units” to — of textual units —;
- Claim 8, Line 1 → amend the phrase “method” to — computerized method —;
- Claim 9, Line 1 → amend the phrase “method” to — computerized method —;
- Claim 10, Line 1 → amend the phrase “method” to — computerized method —;
- Claim 10, Line 26 → amend the phrase “highest result” to — result —;
- Claim 10, Line 26 → amend the term “(n)” to — (r) —;
- Claim 11, Line 1 → amend the phrase “method” to — computerized method —;
- Claim 12, Line 1 → amend the phrase “method” to — computerized method —;
- Claim 12, Line 4 → amend “the last step” to — step (b) —;
- Claim 13, Line 1 → amend the phrase “method” to — computerized method —;
- Claim 13, Lines 4-5 → amend “the last step” to — step (b) —;

***Allowable Subject Matter***

Claims 1-13 are allowed.

The following is an examiner’s statement of reasons for allowance:

*Claims 1, 7, 10 and 11:*

Applicant’s invention is a method of summarizing the text of a document, wherein the summarization is based solely on the text within the document and does not rely on **any** information that is external to the text. That is, the summarization method does not

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use a dictionary, a corpus of similar documents, or any other information that is outside the text of the document.

Applicant's summarization method is based on two premises: 1) a textual unit (a "textual unit" may be a single word or any combination of words within a document) in a particular set of textual units that is a candidate for inclusion in the summary will resemble other textual units within the document; and 2) the similarity of a textual unit within a first set of textual units to another textual unit within a second set of textual units is significant only if a third set of textual units between the first and second sets of textual units is dissimilar to the first and second units of textual units. The first premise is well-known in the art, as demonstrated in Fein (US Patent Application Pub. 2002/0103836) and Katariya (US Patent 6, 549,897). The examiner could not find any prior art that addresses the second premise.

In addition, Applicant's invention includes a particular method of scoring sets of textual units, comprising:

- 1) identifying each "unique textual unit" in the document, wherein every word and combination of words within the document is a "unique textual unit;"
- 2) selecting a first, second and third set of textual units, said third set located between said first set and said second set;
- 3) identifying each "unique textual unit" in the third set, wherein every word and combination of words within the third set is a "unique textual unit;"
- 4) determining the frequency of occurrence of each unique textual units in the third set;

- 5) determining the frequency of occurrence of each unique textual units in the document;
- 6) determining the proximity of the results of Step (4) and Step (5), wherein the proximity is determined by:
  - a) for each unique textual unit in the third set, multiplying the frequency of occurrence of the unique textual unit in the third set by the logarithm of the frequency of occurrence of the unique textual unit in the third set,
  - b) summing the products of Step (a),
  - c) for each unique textual unit in the third set, multiplying the frequency of occurrence of the unique textual unit in the third set by the logarithm of the frequency of occurrence of the unique textual unit in the document,
  - d) summing the products of Step (c), and
  - e) dividing the total of Step (b) by the total of Step (d),
- 7) determining how many textual units are shared between the first set and the second set;
- 8) calculating a score for the first set with respect to the second set as a function of the results of Step (6) and Step (7), wherein said score is the product of Step (6) and Step (7); and
- 9) assigning the highest scoring result of Step (8) to the first set.

The examiner searched the prior art for textual summarization methods that:

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- consider the dissimilarity of a third set of textual units that is located between a first set of textual units and a second set of textual units; and
- score sets of textual units, as defined in the independent claims of the present invention.

The closest art is:

- ✓ Nishizawa, U.S. Patent No. 6,537,325;
- ✓ Katariya et al., U.S. Patent No. 6,549,897; and
- ✓ Gong et al., U.S. Patent Application Publication No. US 2002/0138528.

While these publications may disclose a text summarization method that analyzes only the text within the document, none disclose or suggest the novel scoring technique used in Applicant's invention.

In terms of the claim language, the prior art fails to disclose or suggest a computerized method for summarizing a text, comprising:

- a) selecting first, second and third sets of textual units in the text, wherein said third set is between said first and second sets;
- b) identifying each unique textual unit in the first, second and third sets;
- c) determining how many textual units the first and second sets have in common;
- d) determining the frequency of occurrence of each unique textual unit in the third set;
- e) determining the frequency of occurrence of each unique textual unit in the text;
- f) determining the proximity of the results of steps (d) and (e); and

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- g) calculating a score for the first set with respect to the second set, wherein said score is a function of steps (c) and (f).

*Claims 2-6, 8, 9, 12 and 13:*

These claims are dependent upon Claims 1, 7, 10 and 11, and are thus allowable.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doug Hutton whose telephone number is (571) 272-4137. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon, can be reached at (571) 272-4136. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

WDH  
January 6, 2005

  
HEATHER R. HERNDON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100